



REPLY TO OFFICE ACTION OF APPLICATION 10/669,407

EXAMINER: Stephen Avila

APPLICANT: Eric Vaughn Bleicken

ART UNIT: 3617

DATE OF OFFICE ACTION: June 15, 2004

TITLE OF INVENTION: Bow-facing Rowing System

REMARKS

Pursuant to the office action claim 1 was rejected under 35 U.S.C. 103(a) as being unpatentable over duPont (4,943,250) in view of duPont (4,867,719). It was said, "A forward facing device is disclosed by duPont (4,943,250) with auto-feathering and manual fixing." We disagree with the characterization of duPont '250 patent having "auto-feathering." In the duPont '250 patent has an oar with a vertically mounted hydrofoil at the end of the oar. A hydrofoil is used instead of a blade and is mounted vertically. Throughout the power stroke, the hydrofoil maintains a substantially constant angle to the longitudinal axis of the boat. Also, the hydrofoil itself maintains a 90-degree angle with the water, as opposed to being parallel, as when feathering. The hydrofoil is vertical and 90 degrees with the surface of the water, whereas feathering means horizontal and on a plane parallel to the surface of the water.

Neither the '250 patent, nor the '719 patent have feathering oars. According to <http://www.fact-index.com/r/ro/rowing.html> the term "feather means" means "parallel to the water."^[1] According to the Random House CollegeDictionary (revised edition) p. 483 "feather" means "to turn an oar after a stroke so that the blade becomes nearly horizontal, and hold it thus as it is moved back into position for the next stroke. The On-Line version of the Merriam Webster Dictionary states that feather means "2 a : to turn (an oar blade) almost horizontal when lifting from the water at the end of a stroke to reduce air resistance." This is how experienced rowers and our application uses the term "feather." Nowhere in the duPont '250 patent is feathering disclosed. Nor is there "manual fixing," which means to lock the blade in the power position for maneuvering.

Now to "auto-feather," as was used in claim 1, unlike a regular row boat where the rower must rotate the shaft of the oar and make a conscious effort to feather, with auto-feathering the blades of the oar *automatically* feather without requiring a turn of the handgrip. I.e., during the return stroke simply by pushing forward on the oars the spring loaded blades return to the horizontal position so that they are parallel to the surface of the water to minimize wind resistance. Optimally, feathering should be done in such a way so as to skim the surface in order to provide stability to a fast hull design.

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- ^[1] The complete sentence reads, "The stroke begins with the oar out of the water with the blade feathered, or in other words parallel to the water." It also defines feathering as "Feather -- To turn the oar so that its blade is parallel with the water (opposite of 'square')." "

Also, in claim 1, element iii, the element “a fixed seat and foot operated outrigger on which said oar articulates” is recited. Neither the duPont ‘250 nor the ‘719 patent discloses a “fixed seat and foot operated outrigger on which said oar articulates” in which the outriggers move in the opposite direction as the feet *ergo*, even assuming, *arguendo*, that it would have been obvious to combine the two references, which is not admitted, all of the elements of the claimed invention are not recited. When one or more of the elements of the claimed invention are not recited in the prior art references in at least one of the references cited in a 35 U.S.C. §103 rejection, the rejection is not valid, for at the very least, all the references must disclose *all* the elements. As stated in MPEP 706.02(j) “[T]he prior art reference (or references when combined) must teach or suggest all the claim limitations.”

The claim also mentions “a means to manually fix said oars in the vertical position for maneuver strokes.” A maneuver stroke is a turning stroke or a reverse stroke (rowing backwards). First, the term implies auto-feathering and the “means to manually fix said oars in the vertical position” is a mechanism to turn off the auto-feathering. It is a turnoff mechanism of sorts, which is nonsensical without auto-feathering. Second, the “means to manually fix said oars in the vertical position for maneuver strokes” is a dogging mechanism, which is not disclosed in either the duPont ‘250 or ‘719 patent.

It should be noted that according to MPEP 2146, “known disadvantages in old devices which would naturally discourage search for new inventions may be taken into account in determining obviousness.” Because the duPont ‘719 patent is unable to feather and thus skim the surface for stability, pontoons have had to be added to the boat to keep it upright. This extremely awkward and clumsy arrangement would deter someone from combining with other patents to make the disclosed invention. It would be slow, too massive for convenient transport. The pontoons also slide back and forth in the water in the ‘719 patent as the outriggers are driven by the feet, causing unnecessary turbulence and drag. Also, this imposes an awkward motion wherein the spatial relationship of the pontoons with the hull is not constant but is constantly in flux, with the pontoons traveling forward and back from stern to bow. A person of ordinary skill in the art would not, knowing the deficiencies of the ‘719 patent (which is stern facing), seek to improve on it so to create a bow-facing rowboat.

As stated MPEP 706.02, there must be *a reasonable expectation of success* when combining the references to defeat an application under 35 USC §103. The ‘250 discloses yet another system without *any* means for feathering, let alone auto-feathering. There is no reasonable expectation of success in making a forward (bow) facing rowboat that is not unduly wide (and therefore slow) without feathering. In order to return to a power stroke in the ‘250 patent you must take the hydrofoils completely out of the water without skimming which causes an unstable condition for a fast hull, just as was the case in the ‘719 patent.

Apart from the missing elements of the claim, combining the ‘719 patent with the ‘250 patent, given the unstable designs, would not produce the reasonable expectation of success needed to establish a *prima facie* case of obviousness. MPEP 706.02(j).

The current invention satisfies a long felt but unsolved need of producing a rowing device that allows a rower to use a traditional rowing stroke while facing the direction to which the rower wants to row (i.e. facing forward while rowing forward), works in a manner that prevents instability in the water, and allows for convenient travel as by being mounted on a car.

As will be seen, claim 1 has been reworded and includes the phrase, "said starboard and said port side outrigger mounted in said foot operated outrigger drive mechanism such that the outrigger moves in substantially the opposite direction as the footpad when said footpad is being *pushed*; said outrigger mounted in said foot operated drive mechanism such that the outrigger moves in substantially the opposite direction as the footpad when said footpad is being *pulled*." This *clearly* is not present in either the '719 or '250 duPont patent, and is therefore patentable despite these two references.

It is not in anyway admitted that any of the cited prior by the examiner anticipates or is an obvious variation of existing art. These changes have been made only to achieve clarity, and to put the claims in more traditional form.

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A rowing device that:

- i. provides a means for the operator to face forward in a boat and fixes his weight to one point in said boat and
- ii. uses an articulating oar in conjunction with
- iii. a fixed seat and foot operated outrigger on which said oar articulates
- iv. in conjunction with the rowing device of claim 1 there is a means to auto-feather the blades of said oars and
- v. a means to manually fix said oars in the vertical position for maneuvering strokes.

Amend

1. A rowing device comprising:

a foot operated outrigger drive mechanism having at least one footpad and a port side outrigger and a starboard side outrigger;
said footpad suitable for pushing with the feet;
wherein the port side outrigger is suitable for being on the port side of a rowboat and the starboard outrigger is suitable for being on the starboard side of said rowboat;
said port side and starboard side outriggers respectively having an outboard end and an inboard end;
said starboard and said port side outrigger mounted in said foot operated outrigger drive mechanism such that the outrigger moves in substantially the opposite direction as the footpad when said footpad is being pushed; said outrigger mounted in said foot operated drive mechanism such that the outrigger

moves in substantially the opposite direction as the footpad when said footpad is being pulled.

2. The rowing device of claim 1 further comprising:
said footpad suitable for being slidably mountable in a hull of a row boat so that when one pushes on the footpad with their feet, the rower's body remains in substantially the same position with respect to said hull of said rowboat while propelling the footpad forward with their feet.
3. The rowing device of claim 1 further comprising:
a port side articulating oar attached to said port side outrigger;
a starboard side articulating oar attached to said starboard side outrigger;
said port side articulating oar having a blade shaft and a handgrip shaft wherein said blade shaft and handgrip shaft are attached by an articulating mechanism;
said starboard side articulating oar having a blade shaft and a handgrip shaft wherein said blade shaft and handgrip shaft are attached by an articulating mechanism.
4. The rowing device of claim 3 further comprising:
said articulation of said port side oar being such that when said port side oar handgrip shaft is pulled from bow to stern during the power stroke, the port side oar blade shaft moves substantially longitudinally in the same direction, also from bow to stern;
said articulation of said starboard side oar being such that when said starboard side oar handgrip shaft is pulled from bow to stern during the power stroke, the starboard side oar blade shaft moves substantially longitudinally in the same direction, also from bow to stern;
said articulation of said port side oar and starboard oar being so that when said handgrip segments of the port side and starboard oars are pulled a rower pulling the handgrip segments of the port side and starboard side oars would face the direction the rowboat is moving.
5. The rowing device of claim 4 further comprising:
said articulation of said port side oar being such that when said port side oar handgrip shaft is pushed from stern to bow during the return stroke, the port side oar blade shaft moves substantially longitudinally in the same direction, also from stern to bow;
said articulation of said starboard side oar being such that when said starboard side oar handgrip shaft is pushed from stern to bow during the return stroke, the starboard side oar blade shaft moves substantially longitudinally in the same direction, also from stern to bow.
6. The rowing device of claim 5 further comprising:
said footpad suitable for being slidably mountable in a hull of a row boat so that when one pushes on the footpad with their feet, the rower's body remains in

substantially the same position with respect to said hull of said rowboat while propelling the footpad forward with their feet.

7. The rowing device of claim 5 further comprising:

said port side oar's blade shaft having a blade substantially at the outer end for contact with water and propelling a rowboat through water when moved through the water during the power stroke;

said articulation of said port side oar being such that when said port side oar handgrip shaft is pulled from bow to stern during the power stroke, the port side oar blade is substantially perpendicular with the surface of the water so as to maximize the amount of water being pushed by the blade;

said starboard oar's blade shaft having a blade substantially at the outer end for contact with water and propelling a rowboat through water when moved through the water during the power stroke;

said articulation of said starboard oar being such that when said starboard oar handgrip shaft is pulled from bow to stern during the power stroke, the starboard oar blade is substantially perpendicular with the surface of the water so as to maximize the amount of water being pushed by the blade;

8. The rowing device of claim 5 further comprising:

said articulation of said port side oar being such that when said port side oar handgrip shaft is pushed from stern to bow during the return stroke, the port side oar blade shaft is auto-feathered and is substantially parallel with the surface of the water to minimize wind resistance;

said articulation of said starboard side oar being such that when said starboard side oar handgrip shaft is pushed from stern to bow during the return stroke, the starboard side oar blade shaft is auto-feathered and is substantially parallel with the surface of the water to minimize wind resistance.

9. The rowing device of claim 6 further comprising:

said articulation of said port side oar being such that when said port side oar handgrip shaft is pushed from stern to bow during the return stroke, the port side oar blade shaft is auto-feathered and is substantially parallel with the surface of the water to minimize wind resistance;

said articulation of said starboard side oar being such that when said starboard side oar handgrip shaft is pushed from stern to bow during the return stroke, the starboard side oar blade shaft is auto-feathered and is substantially parallel with the surface of the water to minimize wind resistance.

10. The rowing device of claim 7 further comprising:

said articulation of said port side oar being such that when said port side oar handgrip shaft is pushed from stern to bow during the return stroke, the port side oar blade shaft is auto-feathered and is substantially parallel with the surface of the water to minimize wind resistance;

said articulation of said starboard side oar being such that when said starboard side oar handgrip shaft is pushed from stern to bow during the return stroke, the

starboard side oar blade shaft is auto-feathered and is substantially parallel with the surface of the water to minimize wind resistance.

11. The rowing device of claim 1 further comprising the port side outrigger being attached to the starboard side outrigger so as to form an outrigger assembly having a port side and starboard side.
12. The rowing device of claim 2 further comprising the port side outrigger being attached to the starboard side outrigger so as to form an outrigger assembly having a port side and starboard side.
13. The rowing device of claim 4 further comprising the port side outrigger being attached to the starboard side outrigger so as to form an outrigger assembly having a port side and starboard side.
14. The rowing device of claim 5 further comprising the port side outrigger being attached to the starboard side outrigger so as to form an outrigger assembly having a port side and starboard side.
15. The rowing device of claim 6 further comprising the port side outrigger being attached to the starboard side outrigger so as to form an outrigger assembly having a port side and starboard side.
16. The rowing device of claim 9 further comprising the port side outrigger being attached to the starboard side outrigger so as to form an outrigger assembly having a port side and starboard side.
17. The rowing device of claim 10 further comprising the port side outrigger being attached to the starboard side outrigger so as to form an outrigger assembly having a port side and starboard side.
18. The rowing device of claim 5 where the port oar and starboard oar articulation is a bevel gear.
19. The rowing device of claim 8 where the port oar and starboard oar articulation is a bevel gear.
20. The rowing device of claim 10 where the port oar and starboard oar articulation is a bevel gear.
21. The rowing device of claim 13 wherein outrigger assembly is connected to the footpad with a system of one or more sheaves and one or more cables that cause the outrigger assembly to travel in the opposite direction as the footpad.
22. The rowing device of claim 4 wherein port side outrigger and starboard outrigger is connected to the footpad with a system of one or more sheaves and one or more

cables that cause the outrigger assembly to travel in the opposite direction as the footpad.

23. The rowing device of claim 10 further comprising:
 - said port side outrigger and starboard outrigger connected to the footpad with a system of one or more sheaves and one or more cables that cause the outrigger assembly to travel in the opposite direction as the footpad;
 - a rail upon which the footpad rides so as to slide the footpad back and forth.
24. The rowing device of claim 22 further comprising:
 - a rail upon which the footpad rides so as to slide the footpad back and forth;
 - said cables being mounted outside of a cowling of a rowboat, and down through the center of the rail.
25. The rowing device of claim 4 so that the point of articulation of the port side oar attaches substantially to the outboard end of the port side outrigger and the point of articulation of the starboard side oar attaches substantially to the outboard end of the starboard side outrigger.
26. The rowing device of claim 7 so that the point of articulation of the port side oar attaches substantially to the outboard end of the port side outrigger and the point of articulation of the starboard side oar attaches substantially to the outboard end of the starboard side outrigger.
27. The rowing device of claim 8 further comprising:
 - said port side and starboard side oar respectively having a manually operated dogging device to fix the oar blade in a vertical position (perpendicular to the surface of the water) and to turnoff the auto-feathering.
28. The rowing device of claim 10 further comprising:
 - said port side and starboard side oar respectively having a manually operated dogging device to fix the oar blade in a vertical position (perpendicular to the surface of the water) and to turnoff the auto-feathering.

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